

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A fuel cell system comprising:
 - a fuel cell for generating electric energy based on electrochemical reaction of hydrogen and oxygen;
 - a hydrogen supply apparatus for feeding hydrogen into said fuel cell;
 - a hydrogen supply path for introducing the hydrogen from said hydrogen supply apparatus into said fuel cell;
 - an off-gas circulation path for introducing an off-gas into said hydrogen supply path, said off-gas containing non-reacted hydrogen exhausted from said fuel cell without being consumed in said electrochemical reaction among the hydrogen fed into said fuel cell;
 - off-gas circulating means an ejector pump, disposed in said hydrogen supply path to suck and discharge said off-gas by utilizing entrainment caused by a main stream hydrogen ejected from a nozzle thereof, for circulating said off-gas into said off-gas circulation path and also for mixing said off-gas with a said main stream of hydrogen fed from said hydrogen supply apparatus; and
 - an electronic control unit (ECU) for calculating a hydrogen amount in said main stream of hydrogen based on a pressure of said hydrogen supply path at an upstream side of said ejector pump measured by a pressure sensor, and a pressure at a discharge side of said ejector pump measured by a pressure sensor, and based on an opening area of said nozzle of said ejector pump, for calculating a circulation amount of said off-gas based on a pressure difference between a pressure at a suction side of said ejector pump measured by a pressure sensor and the pressure at the discharge side of said ejector pump measured by said pressure sensor and based on the hydrogen amount in said main stream of hydrogen, and for

calculating a hydrogen concentration in said off-gas circulation path based on the hydrogen amount in said main stream of hydrogen and the circulation amount of said off-gas; and

an off-gas exhaust path control valve for removing impurities not contributing to the electrochemical reaction from said off-gas circulation path based on said hydrogen concentration in said off-gas circulation path under the control of said electronic control unit.

~~main stream hydrogen amount detecting means for detecting a hydrogen amount in said main stream of hydrogen;~~

~~off gas circulation amount detecting means for detecting a circulation amount of said off gas;~~

~~impurity removing means for removing impurities not contributing to the electrochemical reaction from said off gas circulation path;~~

~~wherein an operation of said impurity removing means is controlled based on a hydrogen concentration in said off gas circulation path;~~

~~the hydrogen concentration in said off gas circulation path is calculated based on the hydrogen amount in said main stream of hydrogen and the circulation amount of said off gas;~~

~~said off gas circulating means is disposed in said hydrogen supply path to suck and discharge said off gas by utilizing entrainment caused by said main stream of hydrogen ejected from a nozzle, and~~

~~said off gas circulation amount detecting means calculates the circulation amount of said off gas based on a pressure difference between a suction side and a discharge side of said off gas circulating means and also based on the hydrogen amount in said main stream of hydrogen.~~

2. (Canceled)

3. (Canceled)

4. (Currently Amended) The fuel cell system in accordance with claim 1, wherein said electronic control unit calculates a hydrogen amount fed into said fuel cell ~~is calculated~~ based on the hydrogen concentration in said off-gas circulation path.

5. (Currently Amended) The fuel cell system in accordance with claim 1, wherein the operation of ~~said impurity removing means~~ said off-gas exhaust path control valve is controlled in such a manner that the hydrogen amount fed into said fuel cell satisfies a predetermined condition that is a requested stoichiometric value which is a stoichiometric value obtained from a requested power generation amount, when the stoichiometric value is defined as a value equivalent to the hydrogen amount fed into said fuel cell divided by a hydrogen consumption amount obtained from a power generation amount of said fuel cell.

6. (Canceled)

7. (Original) The fuel cell system in accordance with claim 5, wherein said predetermined condition is a requested hydrogen concentration obtained from a requested power generation amount.

8. (Currently Amended) The fuel cell system in accordance with claim 1, wherein ~~said off-gas circulating means~~ said ejector pump has a function of variably controlling the circulation amount of said off-gas.

9. (Currently Amended) The fuel cell system in accordance with claim 8, wherein the electronic control unit controls the circulation amount of said off-gas ~~is controlled~~ based on a hydrogen concentration in said off-gas circulation path in such a manner that the hydrogen amount fed into said fuel cell satisfies a predetermined condition that is a requested stoichiometric value which is a stoichiometric value obtained from a requested power generation amount, when the stoichiometric value is defined as a value equivalent to the hydrogen amount fed into said fuel cell divided by a hydrogen consumption amount obtained from a power generation amount of said fuel cell.

10. (Canceled)

11. (Original) The fuel cell system in accordance with claim 9, wherein said predetermined condition is a requested hydrogen concentration obtained from a requested power generation amount.

12. (Canceled)

13. (New) The fuel cell system in accordance with claim 1, wherein said pressure sensor is mounted on said off-gas circulation path between said ejector pump and said off-gas exhaust path control valve.